

**Environmental Protection Agency**

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**Part II**

**Environmental  
Protection Agency**

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**40 CFR Parts 257 and 258  
Solid Waste Disposal Facility Criteria;  
Final Rule**

MSWLFs and new information requirements for owners and operators of industrial solid waste disposal facilities and demolition debris landfills. These are landfills that the Agency determined do or may receive household hazardous waste or hazardous waste from small quantity generators. The key provisions of the proposed revised Criteria for MSWLFs are summarized below. Today's rulemaking sets forth the final requirements for owners and operators of these facilities, including the flexibility provided to States seeking to tailor standards to meet State-specific conditions.

EPA's 1988 proposal set forth new requirements pertaining to MSWLF location, design and operation, ground-water monitoring, corrective action, closure and post-closure care, and financial responsibility. The proposed location restrictions identified six locations in which MSWLFs would be subject to special siting restrictions and performance standards: proximity to airports, 100-year floodplains, wetlands, fault areas, seismic impact zones, and unstable areas.

The design criteria proposed by EPA required owners and operators to design MSWLFs to meet a performance standard based on a State-specified ground-water carcinogenic risk level. The proposed operating criteria specified day-to-day operating practices, like daily cover, for proper landfill maintenance.

The Agency also proposed ground-water monitoring and corrective action requirements that established a ground-water monitoring system for detection of releases from landfills and corrective measures for remedying releases once they had been detected. The proposed closure and post-closure care criteria established final cover requirements and a closure performance standard and required a minimum of 30 years of post-closure care of the landfill. The proposed financial responsibility requirements specified that owners and operators must assure that funds would be available to meet closure, post-closure care, and corrective action needs.

EPA received written comments on the proposal from more than 350 commenters. The commenters included more than 130 local governments, about 60 State agencies, and 15 Federal agencies. About 80 private sector firms and 27 trade or professional organizations supplied comments. Ten environmental and/or other public interest groups and 33 private citizens commented on the proposal. In addition, EPA held four public hearings, in which commenters presented oral and written

testimony. All comments were taken into consideration in developing this final rule.

Section III of the preamble, which immediately follows, sets forth the statutory basis for the final rule, describes the broad regulatory options considered, and summarizes the regulatory impact analysis. Section IV responds to general issues raised by commenters on the proposal. Sections V and VI of today's preamble summarize the major provisions of parts 257 and 258, respectively. Section VII reviews the steps that owners and operators and States must undertake to implement today's rule, while Section VIII describes EPA's plans for training on the final rule. The technical appendices provide more detailed discussion of the technical components of today's rule. Responses to comments that are not discussed in the preamble of today's rule are contained in the Comments Response Documents cited in Section X.

### III. Regulatory Approach of Today's Final Rule

#### A. Statutory Basis

Prior to evaluating the appropriate regulatory options for the subtitle D revised Criteria, it was necessary that the Agency determine the precedential effect of the RCRA subtitle C requirements for hazardous waste facilities. These regulations are found, for the most part, at 40 CFR part 265 (interim status facilities) and 40 CFR part 264 (permitted facilities).

The Agency received many comments critical of the proposed Criteria based upon the fact that the Criteria varied from those applicable to hazardous waste facilities under RCRA subtitle C. Several commenters based their comments upon technical information contained in the docket to this rulemaking showing many similarities in the health and environmental threats posed by MSWLFs and subtitle C landfills. Like the proposed Criteria, the revised Criteria promulgated today also differ from the subtitle C requirements. EPA believes that Congress did not intend for EPA to copy the subtitle C regulations for subtitle D facilities and, furthermore, gave the Agency the discretion, through its statutory mandate, to create a separate regulatory program.

EPA agrees with commenters that data available to the Agency at this time do not provide strong support for distinguishing the health and environmental threats posed by MSWLFs and subtitle C facilities. Technical data gathered by the Agency and available in the docket to this

rulemaking do not reveal significant differences in the number of toxic constituents and their concentrations in the leachates of the two categories of facilities. One study (Ref. 8) compared (1) leachates from MSWLFs that began operation before 1980 (the year EPA's regulations for hazardous waste landfills became effective) with leachates from MSWLFs that began operations after 1980 and (2) "post-1980" MSWLF leachates with hazardous waste landfill leachates. MSWLFs that began operation prior to 1980 could contain industrial hazardous waste that, starting in 1980, could only be sent to a subtitle C facility. MSWLFs that began operation after 1980 should only contain small quantity generator and household hazardous wastes in addition to nonhazardous wastes.

As commenters noted, the study did not find significant differences between the number of toxic constituents and their concentrations between leachates from post-1980 MSWLFs and leachates from pre-1980 MSWLFs and hazardous waste landfills. When comparing the mean concentrations of leachates from hazardous waste facilities and MSWLFs, for example, the Agency concluded that there was a "weak indication" in the data that hazardous waste leachate had higher concentrations of hazardous constituents than post-1980 MSWLF leachate.

It should also be noted, however, that these data are variable, and did not reflect long-term monitoring results. As a result, there is a significant possibility that they do not accurately reflect the actual toxicity of MSWLFs and subtitle C leachates at the present time. Furthermore, the Agency has many reasons to believe that the quality of the leachate from MSWLFs will improve over time. Increasingly, communities are instituting household hazardous waste programs and removing toxics from waste prior to its disposal in a municipal landfill. In addition, the Agency expects there to be positive changes in leachate resulting from the 1986 lowering of the cut-off levels for small quantity generator waste and the addition of new RCRA hazardous waste listings and characteristics. The former would reduce the amount of small quantity generator hazardous waste that may be disposed of in MSWLFs while the latter would divert waste currently disposed of at subtitle D facilities to subtitle C facilities. Each of these measures should reduce both the number and the concentration of toxic constituents present in landfill leachates. Thus, better data as well as future data should

provide a stronger technical basis for distinctions between the subtitle C and D regulatory programs.

In raising the similarity in leachates between MSWLFs and hazardous waste facilities, commenters suggested that EPA is legally obligated to promulgate revised Criteria for MSWLFs under subtitle D that are similar to existing regulatory standards for subtitle C hazardous waste facilities. The basis for such a suggestion is that the Agency may not distinguish regulatory standards under subtitles C and D except on technical grounds.

The Agency disagrees with commenters that it is legally obligated to issue revised Criteria for MSWLFs under subtitle D that are identical to subtitle C standards and believes that it has the discretion to create a different regulatory program for MSWLFs. Because this discretion is based upon the statutory language and legislative history of the RCRA provision requiring EPA to promulgate the revised Criteria, the current lack of technical information distinguishing the two universes of solid waste facilities does not affect the Agency's discretion to create two distinct regulatory programs.

The statutory language and legislative history of RCRA subtitle D reveal that Congress mandated a different standard of health and environmental protection from that mandated under subtitle C and that Congress did not intend for EPA to impose the same standards under the two programs. Subtitle C management standards for hazardous waste treatment, storage, and disposal facilities shall be those "necessary to protect human health and the environment." (See, for example, section 3004(a).) Section 4010(c) of the statute, the provision mandating promulgation of the revised Criteria, also contains this same language:

Not later than March 31, 1988, the Administrator shall promulgate revisions of the criteria promulgated under paragraph (1) of section 4004(a) and under section 1008(a)(3) for facilities that may receive hazardous household wastes or hazardous wastes from small quantity generators under section 3001(d). *The criteria shall be those necessary to protect human health and the environment and may take into consideration the practicable capabilities of such facilities* (emphasis added).

However, while stating that the revised Criteria must be those "necessary to protect human health and the environment," subtitle D contains additional language not present in subtitle C, that allows the Agency to explicitly consider practicable capability in determining what is

necessary to protect human health and the environment.

This discretion is found both in the language of section 4010(c), which explicitly provides that EPA may consider the "practicable capability" of facilities in revising the solid waste management criteria promulgated under section 4004(a), and in the language of section 4004(a) itself. EPA believes that these provisions, among other things, explicitly authorizes EPA to consider cost in determining appropriate criteria for subtitle D facilities. The legislative history of section 4010(c) as well as other statutory provisions further support this interpretation.

Section 4004(a) provides that EPA shall promulgate regulations containing criteria distinguishing which facilities are to be classified as sanitary landfills and which as open dumps. This provision incorporates a distinctly different standard of health and environmental protection, which may be interpreted to allow consideration of cost. The section provides that, at a minimum:

\* \* \* a facility may be classified as a sanitary landfill and not an open dump only if there is *no reasonable probability of adverse effects on health or the environment* from disposal of solid waste at such facility (emphasis added).

The statute suggests that the standard under section 4004(a) applies to the revised Criteria mandated under section 4010(c). Section 4010(c) explicitly states that the Administrator is to "promulgate revisions of the criteria promulgated under paragraph (1) of section 4004(a) and under section 1008(a)(3)" for subtitle D facilities that may receive hazardous wastes.<sup>1</sup> Thus, rather than simply directing the Agency to promulgate criteria for solid waste landfills receiving household hazardous and small quantity generator wastes, Congress directed the Agency to "revise" the existing Criteria promulgated under section 4004(a) for these facilities. Furthermore, Congress indicates in section 4005 of the statute that the revised Criteria mandated by section 4010(c) are to be promulgated under section 4004(a). Section 4005(c)(1)(B) states:

Not later than eighteen months after the promulgation of revised criteria under subsection 4004(a) (as required by section 4010(c)), each State shall adopt and implement a permit program or other system or prior approval and conditions \* \* \*

<sup>1</sup> Section 1008 simply requires that the Administrator promulgate solid waste management information and guidelines.

Thus, the Agency believes that when promulgating revisions of criteria under the same statutory provision, it is reasonable for it to refer to the standards imposed under that statutory section in developing the revisions.

The above statutory argument is supported by the legislative history of section 4010(c). In enacting section 4010(c), Congress seems to have been aware that the costs of the regulation may cause many facilities to close. As a consequence, the legislative history suggests that Congress authorized EPA to develop regulations that would avoid massive closures among solid waste disposal facilities. Senator Randolph, in his remarks during floor debate, stated:

(t)he requirements could also precipitate the closure of facilities with substantial capacity, but that are either unable or unwilling to accept new regulatory costs.

By allowing the administrator to consider the practicable capability of solid waste disposal facilities, the Congress has expressed its desire to avert serious disruptions of the solid waste disposal industry.

130 Cong. Rec. S 13814 (daily ed. Oct. 5, 1984). From these statements, it would appear that Congress explicitly authorized EPA to consider costs under section 4010(c) as a criterion for determining if the financial impact upon the owner or operator of an MSWLF could result in the "serious disruptions within the solid waste disposal industry."

While the legislative history of the Hazardous and Solid Waste Amendments of 1984 discusses the meaning of the term "practicable capability" under section 4010(c) and indicates that it refers to cost considerations, the legislative history does not elaborate upon the meaning of section 4004(a) phrase, "no reasonable probability of adverse effects." However, case law provides support for interpreting this standard to allow EPA to consider cost.

Although it alone is not interpreted to imply economic considerations, the term "reasonable," present in section 4004(a), has been read in other contexts to imply a balancing of competing factors. (See e.g., *American Textile Manufacturers Institute, Inc. v. Donovan*, 452 U.S. 490 (1981); *City of New York v. EPA*, 543 F. Supp. 1084 (S.D.N.Y. 1981).) The legislative history indicates that Congress recognized cost versus health and environmental protection to be the competing considerations in revising the subtitle D Criteria. (See e.g., 130 Cong. Rec. S 13814 (daily ed. Oct. 5, 1984)).

Furthermore, use of the word "probability" in "no reasonable

probability" implies the discretion to impose requirements that are less certain to eliminate a perceived health or environmental threat than standards that are "necessary to protect human health and the environment," thus allowing for the consideration of other factors such as cost.

Based upon these considerations, EPA believes it has the explicit discretion to interpret the phrase "practicable capability" under section 4010(c) to allow the consideration of the cost of the revised criteria to MSWLF owners and operators.

The legislative history supports the above statutory reading that EPA may impose different standards under RCRA subtitle D from those imposed under RCRA subtitle C. In the Senate Report to S.757, Congress, in discussing EPA's mandate in revising the subtitle D criteria for MSWLFs, stated:

(t)he multiple liner-leachate collection system requirements of new section 3004(f) applicable to Subtitle C facilities are not to be automatically incorporated in revised criteria for landfills or surface impoundments which are Subtitle D facilities.

S. Rept. 98-248 at 50. Senator Stafford, in his remarks on the Senate floor, also provided for the possibility of differences between the subtitle D and C standards. He stated:

(t)he underlying standard for facilities subject to this amendment to subtitle D remains protection of human health and the environment. Requirements imposed on facilities may vary from those for Subtitle C facilities, however, and still meet this standard.

130 Cong. Rec. at S 13814.

Finally, two aspects of the nature of Congress' regulation of MSWLFs containing household or small quantity generator hazardous waste support a Congressional intent to preserve differences between the RCRA solid and hazardous waste programs. First, Congress chose to regulate such facilities by revising the subtitle D criteria rather than subjecting them to the subtitle C requirements. Second, Congress' statutory directives in the HSWA amendments to revise the subtitle D criteria lack the prescriptiveness of similar amendments to the subtitle C program. In place of Congress' imposition of land disposal restrictions and precise liner and leachate collection requirements in the 1984 amendments, Congress merely told EPA to revise the Criteria under section 4004(a) as necessary to protect human health and the environment, taking into consideration practicable capability.

Furthermore, Congress specified only the "minimums" of such a program, mandating that the revised criteria include requirements for ground-water monitoring, location standards, and corrective action.

As a consequence, EPA has determined that it has the discretion to create a regulatory program for RCRA subtitle D MSWLFs that would allow for standards that are distinct from the RCRA subtitle C program for hazardous waste facilities, and thus EPA can allow for greater flexibility in State solid waste programs.

#### *B. Regulatory Options Considered and Summary of the Regulatory Impact Analysis*

The Agency considered a number of broad regulatory options for today's final rule and, in accordance with Executive Order 12291, prepared a Regulatory Impact Analysis (RIA), December 1990, that evaluates the benefits and impacts of each of the regulatory options. The RIA also contains an analysis of the economic impact on small communities, as required by the Regulatory Flexibility Act (RFA). Complete information on RIA methodology, data, assumptions, and results is contained in the Final Regulatory Impact Analysis. Information on the availability of the RIA is provided in the Supplementary Information Section of today's preamble.

In addition to the RIA, in Spring 1991, the Agency updated and revised the Regulatory Impact Analysis to incorporate changes in state regulations as of January 1991 and to represent the increased flexibility of today's rule, referred to as the Hybrid approach. These changes in assumptions, result in a significant reduction in risk, cost and economic estimates for all options considered. Results from this revised analysis are presented below and are presented in the Addendum to the RIA, August 1991. Information on the availability of the Addendum is provided above.

The Agency considered, in addition to the original proposal, four broad regulatory options for today's final rule. These options included (1) the "Limited Option approach" (2) the "subtitle C, approach" (3) the "Hybrid approach," and (4) the "Categorical approach." Under the limited option approach, the revised Criteria would be limited to the enumerated requirements identified by the 1984 Hazardous and Solid Waste Amendments—location restrictions, ground-water monitoring, and corrective action for ground-water contamination.

Rather than focusing on preventing environmental contamination in the first instance, this option relies almost exclusively on detection and expensive clean-up programs to protect human health and the environment. Other than location restrictions, owners or operators of MSWLFs would not be required to comply with any preventive measures such as proper landfill design, operation, and closure.

Under the "subtitle C" option, owners and operators of MSWLFs would be subject to a comprehensive set of facility requirements identical to those established for hazardous waste disposal facilities under subtitle C of RCRA. The final "Hybrid" option, which is the approach taken in today's final rule, combines the limited option provisions with a range of preventive measures appropriate for MSWLFs and provides States seeking to accept the program with the flexibility to adopt the preventive measures most appropriate to their State. In particular, the Hybrid approach addresses all of the categories of control included in the subtitle C option, but is less stringent and, therefore, more flexible in several respects, most notably in the landfill design and closure requirements. Thus, while differing in content, both the Hybrid and subtitle C options include requirements relating to facility location, design, operation, ground-water monitoring, corrective action, closure and post-closure care, and financial assurance.

Finally, EPA investigated a fourth approach, the categorical approach, whereby landfill design standards would be categorized based on various factors, particularly hydrogeology and precipitation. During rule development, EPA and the States attempted to develop such an approach. The approach was rejected by both Agency research and technical staff, and by the States, because it was technically infeasible to tailor categories to the wide variety of situations throughout the country. All attempts to simplify the categories led to over or under regulation. Each attempt suffered from a variety of technical deficiencies. Because the Agency rejected the categorical approach, this approach will not be discussed further in this preamble. Rather EPA's evaluation of this option is addressed in the detailed background discussion on the design criteria presented in Appendix E to today's preamble. In addition, the Regulatory Impact Analysis results for